STATE OF MINNESOTA
EQUIPMENT SPECIFICATION

SALT BRINE PRODUCTION SYSTEMS/HEATED BINE SYSTEM SHELTERS/ MIXING SYSTEMS/STORAGE TANKS

SCOPE

This unit must be the most current advertised production model as modified per specifications and approved by Mn/DOT, furnished with all standard equipment advertised, whether or not specifically called for here, except where the item is replaced by optional over standard equipment or conflicting equipment is specified. The unit must be complete with all equipment required for immediate operation to function as listed below and the unit must meet all applicable codes and standards.

1.0 Salt Brine Production System Requirements

1.1 If the brine maker has a brine tank the minimum holding capacity must be 200 gallons.
1.2 Main salt brine tank must be constructed from stainless steel, molded polyethylene that is UV stabilized to provide protection from sunlight or made of fiberglass with a ceramic or polymer gel coating.
1.3 Brine tank must have an open floor in order to not hinder cleaning. Tank must have a pitched bottom to the lower sump area or a hinged sump to provide total drainage.
1.4 Hopper/rock salt tank must be constructed from stainless steel, molded polyethylene that is UV stabilized to provide protection from sunlight or made of fiberglass with a ceramic coating.
1.5 Hopper must have an open floor with no interior ribs to hinder cleaning. Hopper must have a pitched bottom to lower sump area or a hinged sump to provide total drainage.
1.6 Hopper must have a full-length water in-feed manifold to provide even filling and salt saturation.
1.7 Minimum rock salt holding capacity must be 3 cubic yards.
1.9 Effluent ejector pump must be UL listed and have thermal overload protection.
1.10 Water service piping must be 1-1/2" minimum throughout the entire system. Water in-feed to the hopper tank must be controlled to maintain the level of brine in the main tank.
1.11 Unit must be self-supporting.
1.12 The Contract Vendor must give adequate training in mounting and removal, operation, safety and maintenance of supplied equipment at delivery site before the purchase will be considered complete.
1.13 Each unit must come complete with one set of parts, service and operations manuals, as well as a complete wiring diagram.
1.14 Manufacturer's standard color is acceptable; however, the paint must be lead free.
1.15 The responder must furnish a standard manufacturer's warranty. The contract vendor must be responsible for the cost of any inspections, adjustments, parts, labor, travel, pickup and/or delivery charges that are a result of equipment failure(s) during the warranty period. This must be performed immediately without any delay. This warranty must commence when the unit is put into service. The responder must state warranty for all items offered on pricing page.

2.0 Heated Brine System Shelter Requirements

2.1 The shelter must be constructed from stainless steel or molded polyethylene that is UV stabilized to provide protection from sunlight. The shelter must be a "Building" that is large enough to house the Brine maker as listed in Sec 1.0.
2.2 The shelter must be double walled with insulation between the two walls to obtain a minimum R-value of nine.
2.3 The shelter must include a flange at the bottom to allow proper anchoring capabilities to customer supplied foundations.
2.4 The roof panels must incorporate a stainless-steel hinge to allow the roof to be opened for salt loading.
2.5 Each shelter must be equipped with a spill shield that allows over spilled salt to be directed into the hopper of the salt brine production system.
2.6 All bolts used to assemble the structure must be a minimum of #304 stainless steel, including washers and nuts.
2.7 A one-piece, lockable door panel, which incorporates a stainless-steel hinge, must be provided for entry into the shelter. Each door must be equipped with stainless-steel toggle clamps to hold the door securely closed. A draw latch must be mounted on each door, to allow the door to be securely closed from the inside.
2.8 Each shelter must have a through wall pipe to provide a means of attaching a hose to the brine system allowing operators to pump salt brine directly from the brine system without having a discharge hose exiting through the door opening.
2.9 Mn/DOT may require inspection of similar unit in order to determine the unit meets specifications before award is

made.

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2.13 The responder must furnish a standard manufacturer's warranty. The Contract Vendor must be responsible for the cost of any inspections, adjustments, parts, labor, travel, pickup and/or delivery charges that are a result of equipment failure(s) during the warranty period. This must be performed immediately without any delay. This warranty must commence when the unit is put into service. The responder must state warranty for all items offered on pricing page.

2.14 There must be a option for shed heaters listed on the price page. The heater should be able to heat inside of shed to tempters above 32 degrees when shed is closed.

3.0 Mixing System Requirements

3.1 The mixing system must be able to mix up to three separate de-icing chemicals and load into a plow truck.

3.2 The mixing system must be able to change ratios of chemicals as the storm progresses. The system must be able to mix two chemicals and a three chemical blend, being automatically control by the mixing valves.

3.3 The system must use stainless steel centrifugal pumps driven by a electric motor correctly sized for the primary pump. The pump must be able to pump enough water for the system when operating at full capacity.

3.4 All mixing systems must have a method of diverting the flow back to the storage tanks.

3.5 There must be a provision for the pumps and pluming to be easily accessible for repairs.

3.6 The controller display must be mounted in a NEMA 4 rated that is large enough to enclose the controller and also allow for the following switch mounting: On/Off, Blend/Recirculate, Reset, and emergency stop. The enclosure must be mounted on the stainless steel pump enclosure in order to provide a turnkey package.

3.7 The system must come prewired and ready for connection to a customer supplied power source.

3.8 The unit must have a one year warranty.

4.0 Stationary Storage Tank Requirements

4.1 Tank must be of fiberglass or heavy weight, rotationally molded, polyethylene construction.

4.2 Tank must be a double wall type with 110% containment capability. The Polyethylene tanks must meet the ASTM D-1998 Standard for tanks. Single wall tanks will be accepted only as a option.

4.3 Tank must be designed for above ground storage of various salt brine solutions. Tanks must have a specific gravity rating of 1.5 or greater.

4.4 Tank must have liner that is compatible with the liquid being stored.

4.5 Tank must have a closed, non-removable top with a manway.

4.6 Contract Vendor must provide up to (3) three fittings, sized up to 3" N.P.T. in the tank, with the locations designated by the ordering entity.

4.7 Tank must have a means of reading both liquid and containment tank levels.

4.8 Tank must provide a method for moving from one location to another.

4.9 Tank must have a top vent with screen.

4.10 Holding pond equipment is not acceptable.

5.0 ADDITIONAL ELECTRICAL SERVICE REQUIREMENTS

5.1 All electrical service must be protected from hazardous shock by a 115-volt, GFI receptacle with trip and reset and be enclosed in a waterproof outdoor service enclosure.

5.2 Electrical connection is made by connecting the power service cord on the equipment to the customer supplied electrical service.

5.3 All units must be flow tested to specification with a purchaser's representative present before the purchase will be considered complete.

5.4 System installation and set up charge if applicable, must include all hoses, fittings, couplers, adaptors, electrical connectors and installation of all equipment or components at each installation sight.

6.0 RESPONDER INSTRUCTIONS

6.1 Responders must make a pricing page for each salt brine production system, heated brine system shelter and/or mixing system, and storage tanks they are offering. One model per pricing page. Be complete, especially when offering options. If you do not list an option, you cannot legally sell it on the contract.

6.2 Responders must use the pricing page included so there is consistency for purchasers to compare pricing and options when determining what they want to purchase. This includes the base unit product information requested at the beginning of the pricing page. Deviating from using the pricing page is reason for rejecting a bid. Mn/DOT

will convert Contract Vendor's pricing page to a contract pricing page for communication to State Agencies and Cooperative Purchasing Venture members.

6.3 For optional items, which end up being in lieu of standard items, such as larger pump, etc., the price, must be the difference paid to achieve the upgrade rather than the full purchase price.

6.4 Delivery costs are to be for loaded miles only. Responder must state starting location. Mileage distances will be determined from the website, http://maps.yahoo.com.

6.5 The responder must state company name, address, contact, phone number, fax number and toll free number if they have one at the top of each pricing page submitted.

6.6 Trade-ins will be allowed. Trade-in value will be offered by the contract vendors' representative on a case-by-case basis. Buyer has the last right of refusal. All pertinent surplus property rules must prevail.